

REMARKS

The Office Action dated November 30, 2005 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 26-34 are amended to particularly point out and distinctly claim the subject matter of the present invention. Support for the amendments is found at least on page 4, line 28 of the specification. Claims 2, 4, 12, 17, 19-22, are amended to correct dependencies. Claims 1 and 14 are cancelled without prejudice. Entry of the amendments is respectfully requested because the amendments place the application in better condition for appeal, do not raise new issues that require further search and/or consideration, and do not contain new matter. Claims 2-13 and 15-34 are respectfully submitted for consideration.

The Office Action objected to claim 14. Applicants respectfully submit that this objection is moot in light of the cancellation of claim 14.

The Office Action rejected claims 1, 2, 14, 21, 22, 24, 26, 30, 33 and 34 under 35 U.S.C. 102(b) as being anticipated by US Patent No. 4,799,062 to Sanderford Jr. et al. (Sanderford), and rejected claims 4-11, 13, 15, 15, 16, 20 and 23 under 35 U.S.C. 103(a) as being obvious over Sanderford, in view of US Patent No. 6,018,312 to Haworth (Haworth). Regarding the rejections under 35 U.S.C. 103(a) the Office Action took the position that Sanderford disclosed all of the features of independent claim 15 and the claims dependent therefrom, with the exception of first and second receiving units are

movable between a plurality of locations and are both arranged to receive a pair of signals when in each of the plurality of locations. Applicants respectfully submit that the cited reference fails to disclose or suggest all of the features recited in any of the pending claims. The rejections of claims 1 and 14 are moot in light of the cancellation of these claims.

Claim 15, from which claims 2, 4-13, and 17-25 depend, recites a telecommunications system. The telecommunications system includes a first transmitter unit situated at a first, known location and a second transmitter unit situated at a second, unknown location. The telecommunications system further includes a first receiving unit at a third, known location arranged to receive signals from the first and second transmitter units, and further arranged to determine the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. A second receiving unit at a fourth, known location is arranged to receive signals from the first and second transmitter units, and further arranged to determine the time difference between the arrival time of a signal from the first transmitter unit and a signal from the second transmitter unit. The signals received time differences determined by the first and second receiving units are usable to ascertain the location of the second transmitter unit.

Claim 26 recites a telecommunications system. The telecommunications system includes a first transmitter unit situated at a first, known location. The telecommunications system further includes a second transmitter unit situated at a

second, unknown location. A first receiving unit at a third, known location is arranged to receive signals from the first and second transmitter units. A second receiving unit at a fourth, known location is arranged to receive signals from the first and second transmitter units, wherein the said signal received by the first and second receiving units are usable to ascertain the location of the second transmitter unit. Further, a calculation unit is arranged to use the signals received by the first and second receiving units or any values derived from the said signals to ascertain the location of the second transmitter unit. The calculation unit is arranged to verify the accuracy of the ascertained location of the second transmitter unit by comparing it with location information of the second transmitter unit obtained from other sources, and the first and second receivers are the same entity.

Claim 30 recites a method of determining the location of a transmitter unit in a telecommunications system. The method includes receiving signals at a first receiving unit situated at a first, known location from a first transmitter unit situated at a second, known location and from a second transmitter unit situated at a third, unknown location, and determining the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. The method further includes receiving signals at a second receiving unit situated at a fourth, known location from the first transmitter unit and from the second transmitter unit, and determining the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. The time differences determined are used to

ascertain the location of the second transmitter unit. The first and second receivers are the same entity.

Claim 33 is directed to a calculation unit for use in a telecommunications system. The calculation unit includes a first transmitter unit situated at a first, known location and a second transmitter unit situated at a second, unknown location. A first receiving unit at a third, known location is arranged to receive signals from the first and second transmitter units, and arranged to determine the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. A second receiving unit at a fourth, known location is arranged to receive signals from the first and second transmitter units, and further arranged to determine the time difference between the arrival time of a signal from the first transmitter unit and a signal from the second transmitter unit. The calculation unit is arranged to use the time differences between the arrival times of signals from the first and second transmitter units as determined by the first and second receiving units to ascertain the location of the second transmitter unit. The first and second receivers are the same entity. Claim 34 is directed to a computer program that includes the features recited in claim 33.

Applicants respectfully submit that each of the pending claims recite features that are neither disclosed nor suggested in the cited reference.

Sanderford is directed to a method for determining the position of a mobile transmitter in a wireless network. In Sanderford, signals from the mobile transmitter and

a reference transmitter are received at a number of fixed base station receivers. These signals can then be used to determine the location of the mobile transmitter.

Haworth is directed to a method of locating a transmitter positioned at an unknown location on the surface of the earth. Signals from the unknown transmitter and from a reference transmitter are received by two satellites and each satellite relays the received signals to a ground station. Therefore, Haworth necessarily discloses two satellites because a satellite that is not the target for the main lobe of the transmitter, the received signal strength is very low and the signal must be recovered through a signal correlation technique that correlates the received signal with the signal received by the other satellite. The two satellites disclosed in Haworth must clearly be two separate entities.

Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest at least the feature of the first and second receivers being the same entity as recited in claims 15, 26, 30, 33 and 34.

In the rejection of claim 15, the Office Action admitted that Sanderford failed to disclose or suggest this feature and alleged that Haworth cured this deficiency. However, as discussed above, Haworth clearly discloses two satellites and therefore, two separate entities. Thus, the first and second receivers are not and could not be the same entity as recited in the above claims. Therefore, Haworth fails to cure the admitted deficiencies of Sanderford.

Applicants respectfully submit that because claims 2, 4-11, 13, 16, 20 21, 22, 23 and 24, depend from claim 15, these claims are allowable at least for the same reasons as claim 15 as well as for the additional features recited in these dependent claims.

Based at least on the above, Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in any of the pending claims. Accordingly, withdrawal of the rejections of claims 2, 21, 22, 24, 26, 30, 33 and 34 under 35 U.S.C. 102(b) and of claims 4-11, 13, 15, 16, 20 and 23 under 35 U.S.C. 103(a) is respectfully requested.

The Office Action rejected claim 12 under 35 U.S.C. 103(a) as being obvious over Sanderford, in view of US Patent No. 6,661,998 to Hunzinger et al. (Hunzinger). The Office Action took the position that Sanderford disclosed all of the features recited in claim 12 except that the signals received by the first and second receiving units are received in response to signals sent to the first and second transmitter units by the first and second receiving units. Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in any of the pending claims. Specifically, Sanderford is deficient at least for the same reasons discussed above regarding claim 15, and Hunzinger fails to cure these deficiencies.

Sanderford is discussed above. Hunzinger is directed to a method of mobile station to base station communication and signal acknowledgement. Applicants submit that because Hunzinger fails to disclose or suggest at least the feature of the first and second receivers being the same entity, Hunzinger fails to cure the deficiencies of Sanderford.

Thus, the cited references taken individually or in combination, fails to disclose or suggest all of the features of claim 12. Accordingly, withdrawal of the rejection of claim 12 under 35 U.S.C. §103(a) is respectfully requested.

The Office Action rejected claims 17, 18, and 25 under 35 U.S.C. §103(a) as being obvious over Sanderford in view of US Patent No. 6, 611, 788 to Husa (Husa). The Office Action took the position that Sanderford disclosed all of the features of these claims except the features of a cell phone (claim 17), and Enhanced Observed Time Difference (E-OTD) and Global Positioning System (GPS) location method, or Observed Time Difference of Arrival (OTDOA) and GPS location method. The Office Action asserted that Husa disclosed these features. Applicants submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features of these claims. Specifically, Applicants submit that Sanderford is deficient at least for the same reasons discussed above, and that Husa fails to cure these deficiencies.

Husa is directed to an apparatus and method for measuring and recording movement of a mobile station using a mobile network. Husa describes following and recording the time and distance traveled by a mobile station held by an athlete during training so that the results of the training exercise can be recorded in a database. However, Husa does not disclose or suggest at least the feature of first receiver and the second receiver being a single entity. Thus, Husa does not cure the deficiencies of Sanderford.

Based at least on the above, Applicants submit that the cited references taken individually or in combination fail to disclose or suggest all of the features of claims 17, 18, and 25. Accordingly, withdrawal of the rejection of these claims under 35 U.S.C. §103(a) is respectfully requested.

The Office Action rejected claims 19, 28, 29, 31 and 32 under 35 U.S.C. 103(a) as being obvious over Sanderford, in view of US Publication No. 2003/0125046 to Riley et al. (Riley). The Office Action took the position that Sanderford disclosed all of the features recited in these claims except one or both of the first and second transmitter units is a cellular base station. The Office Action asserted that Riley disclosed this feature. Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in any of the pending claims.

Regarding claim 19 which depends from claim 15, Applicants submit that Sanderford is deficient at least for the same reasons discussed above regarding claim 15, and Riley fails to cure these deficiencies.

Claim 28 recites a telecommunications system that includes a first transmitter unit situated at a first, known location, and a second transmitter unit situated at a second, fixed, unknown location. A first receiving unit at a third, known location is arranged to receive signals from the first and second transmitter units; and further arranged to determine the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. A second receiving unit at a

fourth, known location is arranged to receive signals from the first and second transmitter units, and to determine the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. The time differences determined by the first and second receiving units are usable to ascertain the location of the second transmitter unit. The first and second receivers are the same entity.

Claim 29 recites a telecommunications system that includes a first base station situated at a first, known location, and a second base station situated at a second, unknown location. A first mobile station at a third, known location is arranged to receive signals from the first and second base stations, and to determine the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. A second mobile station at a fourth, known location is arranged to receive signals from the first and second base stations, and to determine the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. The time differences determined by the first and second mobile stations are usable to ascertain the location of the second base station. The first and second receivers are the same entity.

Claim 31 recites a method of determining the location of a transmitter unit in a telecommunications system. The method includes receiving signals at a first receiving unit situated at a first, known location from a first transmitter unit situated at a second, known location and from a second transmitter unit situated at a third, fixed, unknown location. The method further includes determining the time difference between the arrival

times of a signal from the first transmitter unit and a signal from the second transmitter unit. Signals are received at a second receiving unit situated at a fourth, known location from the first transmitter unit and from the second transmitter unit. The method further includes determining the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit, and using the time differences determined to ascertain the location of the second transmitter unit. Further, and the first and second receivers are the same entity.

Claim 32 recites a method of determining the location of a base station in a telecommunications system. The method includes receiving signals at a first mobile station situated at a first, known location from a first base station situated at a second, known location and from a second base station situated at a third, unknown location. The time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit is determined. The method further includes receiving signals at a second mobile station situated at a fourth, known location from the said first base station and from the said second base station. The method further includes determining the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit. The time differences determined are used to ascertain the location of the second base station. Further, the first and second receivers are the same entity.

Applicants respectfully submit that the pending claims recite features that are neither disclosed nor suggested in any of the cited references.

Sanderford is discussed above. Riley is directed to a method of locating a base station in a mobile communication system using signals transmitted between the base station and mobile stations of a known location. Riley does mention the use of a base station in a known location to be used as a references transmitter and that each mobile station is arranged to determine the time difference between the arrival times of a signal from the first transmitter unit and a signal from the second transmitter unit and using the determined time differences to ascertain the position of the second transmitter unit. However, Riley fails to disclose or suggest at least the feature of the first and second receivers being the same entity, as recited in claims 28, 29, 31, and 32. Thus, Riley fails to cure the deficiencies of Sanderford.

Based at least on the above, Applicants submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features of claims 19, 28, 29, 31, and 32. Accordingly, withdrawal of the rejection of claims 19, 28, 29, 31 and 32 under 35 U.S.C. §103(a) is respectfully requested.

The Office Action rejected claim 27 under 35 U.S.C. 103(a) as being obvious over Sanderford, in view of US Patent No. 6,134,448 to Shoji et al. (Shoji). The Office Action took the position that Sanderford disclosed all of the features recited in claim 27 except to ascertain location of the second transmitter unit usable to check the accuracy of identification information of the second transmitter unit obtained from other sources and thus identify the second transmitter. The Office Action asserted that Shoji disclosed this

feature. Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in claim 27.

Claim 27 recites a telecommunications system. The telecommunication system includes a first transmitter unit situated at a first, known location. A second transmitter unit is situated at a second, unknown location. A first receiving unit at a third, known location is arranged to receive signals from the first and second transmitter units. A second receiving unit at a fourth, known location is arranged to receive signals from the first and second transmitter units. The signals received by the first and second receiving units are used to ascertain the location of the second transmitter unit. The ascertained location of the second transmitter unit is used to check the accuracy of identification information of the second transmitter unit obtained from other sources and thereby identifies the second transmitter. The first and second receivers are the same entity.

Applicants respectfully submit that claim 27 recites features that are neither disclosed nor suggested in any of the cited references. Specifically, Sanderford is deficient at least for the same reasons discussed above and Shoji fails to cure these deficiencies.

Sanderford is discussed above. Shoji is directed to a system for detecting positional information of a mobile terminal. The mobile terminal transmits base station identification information transmitted from the base stations and information of the intensity of the electric field of a received radio wave from the base station to a position managing station, while the position managing station specifies the current position of the

mobile terminal. However, Shoji fails to disclose or suggest at least the feature of the first and second receiving units being the same entity as recited in claim 27. Instead, in Fig. 2 for example, Shoji discloses a single receiver (reference number 21). Thus, Shoji fails to cure the deficiencies of Sanderford.


Based at least on the above, Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in claim 27. Accordingly, withdrawal of the rejection of claim 27 under 35 U.S.C. 103(a) is respectfully requested.

Applicants respectfully submit that each of claims 2-13 and 15-34 recite features that are neither disclosed nor suggested in any of the cited references. Accordingly, Applicants respectfully request that each of claims 2-13 and 15-34 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Petition for Extension of Time
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